March 19, 1872.

John Gould, Esq., F.R.S., V.P., in the Chair.

The following report on the additions to the Society's Menagerie during the month of February 1872 was read by the Secretary:—

The total number of registered additions to the Society's Menagerie during the month of February 1872 was 127, of which 6 were by birth, 24 by presentation, 92 by purchase, 2 by exchange, and 3 were received on deposit. The total number of departures during the same period by death and removals was 121.

The principal arrival during the month was that of the female Hairy-eared Rhinoceros (*Rhinoceros lasiotis*), which was announced to the Society at the last meeting*.

This animal was captured in January 1868 near Chittagong, in the manner described in the following extract from a Calcutta newspaper:—

"The quiet station of Chittagong has been lately enlivened by the presence of a Rhinoceros. It appears that about a month ago some natives came into Chittagong and stated that a Rhinoceros had been found by them in a quicksand, and was quite exhausted with the efforts to release herself. They had attached two ropes to the animal's neck, and with the assistance of about 200 men dragged her out, and keeping her taut between two ropes they eventually made her fast to a tree. The next morning, however, they found the Rhinoceros so refreshed and making such efforts to free herself that they were frightened, and made application to the magistrate of Chittagong for protection. The same evening Captain Hood and Mr. H. W. Wickes started with eight Elephants to secure the prize, and after a march of about sixteen hours to the south of Chittagong they came up with the animal. She was then discovered to be a Sumatran Rhinoceros, rather more than four feet in height, with a smooth hairy skin somewhat like that of a Pig, and with two horns (one up high, almost between the eyes and small, the other rather larger and just above the nose), and the upper lip almost coming to a point and protruding a little.

"The Elephants at the first sight of the Rhinoceros were very much afraid and bolted one and all, but after some little exertion they were brought back and made to stand by. A rope was now with some trouble attached to the animal's hind leg and secured to an elephant; at this juncture the Rhinoceros roared, the Elephants again bolted; and had it not been for the rope slipping from the leg of the Rhinoceros, that limb might have been pulled from the body. The Rhinoceros was, however, eventually secured with ropes between Elephants and marched into Chittagong in perfect health. Two large rivers had to be crossed:—first, the Sungoo river, where the animal was towed between Elephants, for she could not swim and could only just keep her head above water by paddling with the fore feet like a Pig; and secondly, the Kurnafoolie river, when the ordinary cattle ferry-boat was used. Thousands of natives thronged the march in, which occupied a few days, the temporary bamboo bridges on the Government road invariably falling in with the numbers collected thereon to watch the Rhinoceros crossing the stream below; and sometimes the procession was at least a mile in length. The 'Begum,' as the Rhinoceros has been named, is now free from all ropes and kept within a stockade enclosure, having therein a good bath excavated in the ground and a comfortable covered shed attached. She is already very tame, and will take plantain-leaves or chuppattees from the hand, and might almost be led about by a string."

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* See *anteà*, p. 185, where it is spoken of as *R. sumatrensis*. But an example of the true *R. sumatrensis* from Malacca having been subsequently received (*v. infr.* P. Z. S. Nov. 1872), it became obvious that this Rhinoceros was quite distinct; and I have proposed to call it *R. lasiotis*.—P. L. S., Aug. 28, 1872.

The fact of a Two-horned Rhinoceros being in captivity in Chittagong having become known to the Council of the Society, various endeavours were made to come to some arrangement with the owners for its acquisition for the Society's Menagerie. These, however, never came to any definite result. Mr. William Jamrach being in Calcutta last November was more successful in his negotiations, and on his return to this country last month was fortunate enough to bring with him the animal in perfect health and condition.

This animal has been so well described by Dr. Anderson in his communication to the Society on this subject read on the 6th of February last (see *anteà*, p. 129), that I have but few particulars to add to what he has said.

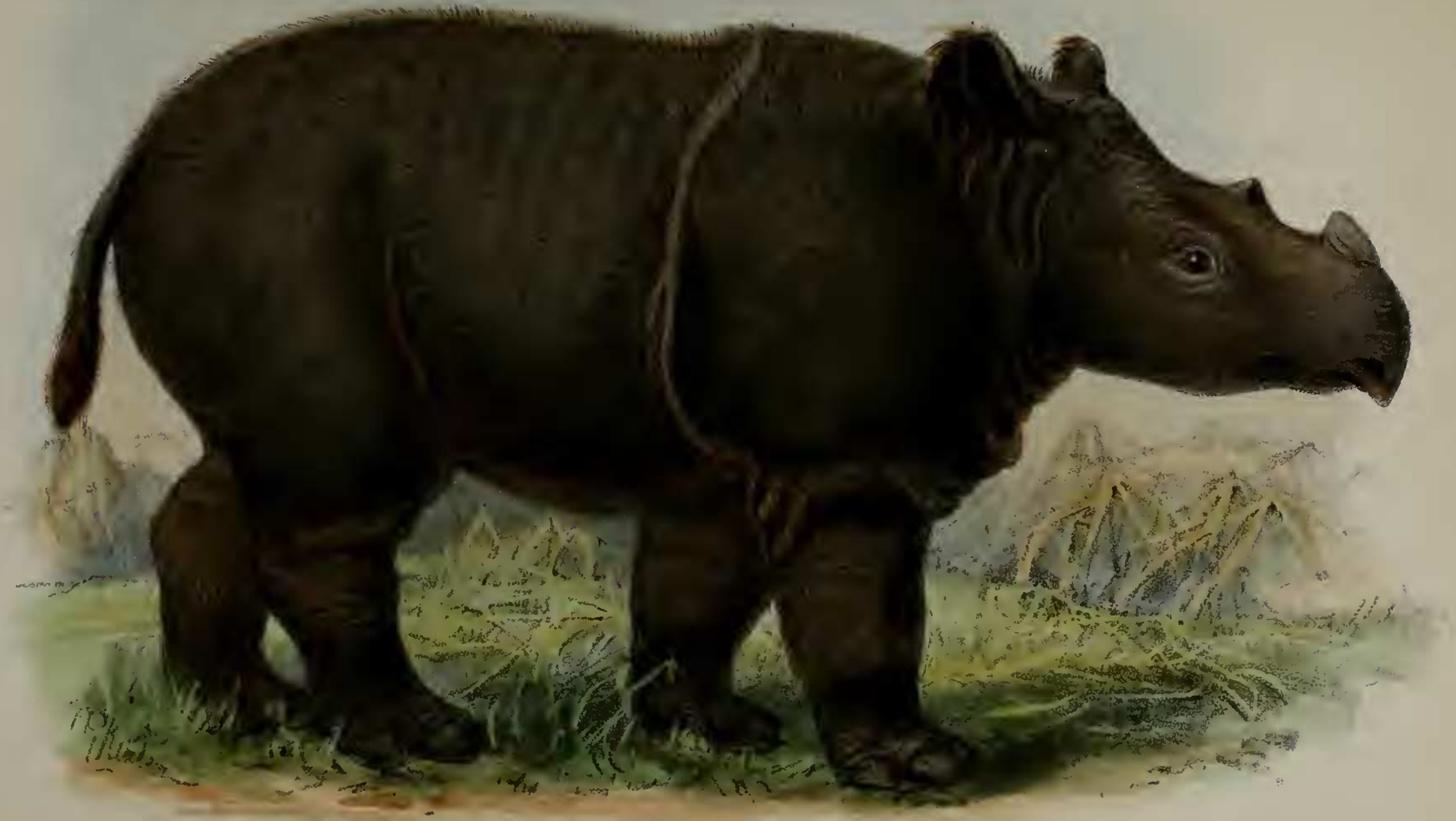
The drawing by Mr. Keulemans now exhibited (Plate XXIII.) will give a good idea of its external appearance.

As far as I have been able to make out by examination of its mouth, there are at present no upper incisors, but a pair of lower incisors only, of which the right is furthest up. I suppose, therefore, that the upper incisors are not developed until late in life, as our animal must be at least six years old.

Some other animals of great interest were obtained from Mr. Jamrach along with this Rhinoceros, namely:—

1. A female of the Macaque recently described by Dr. Anderson as *Macacus brunneus* (see *anteà*, p. 203 and Plate XII.). Two other examples of this Monkey likewise arrived from Calcutta under Mr. Jamrach's care—a male presented by Mr. Oscar Fraser, Assistant in the Indian Museum, Calcutta, and a female presented by Lieut. Burne.

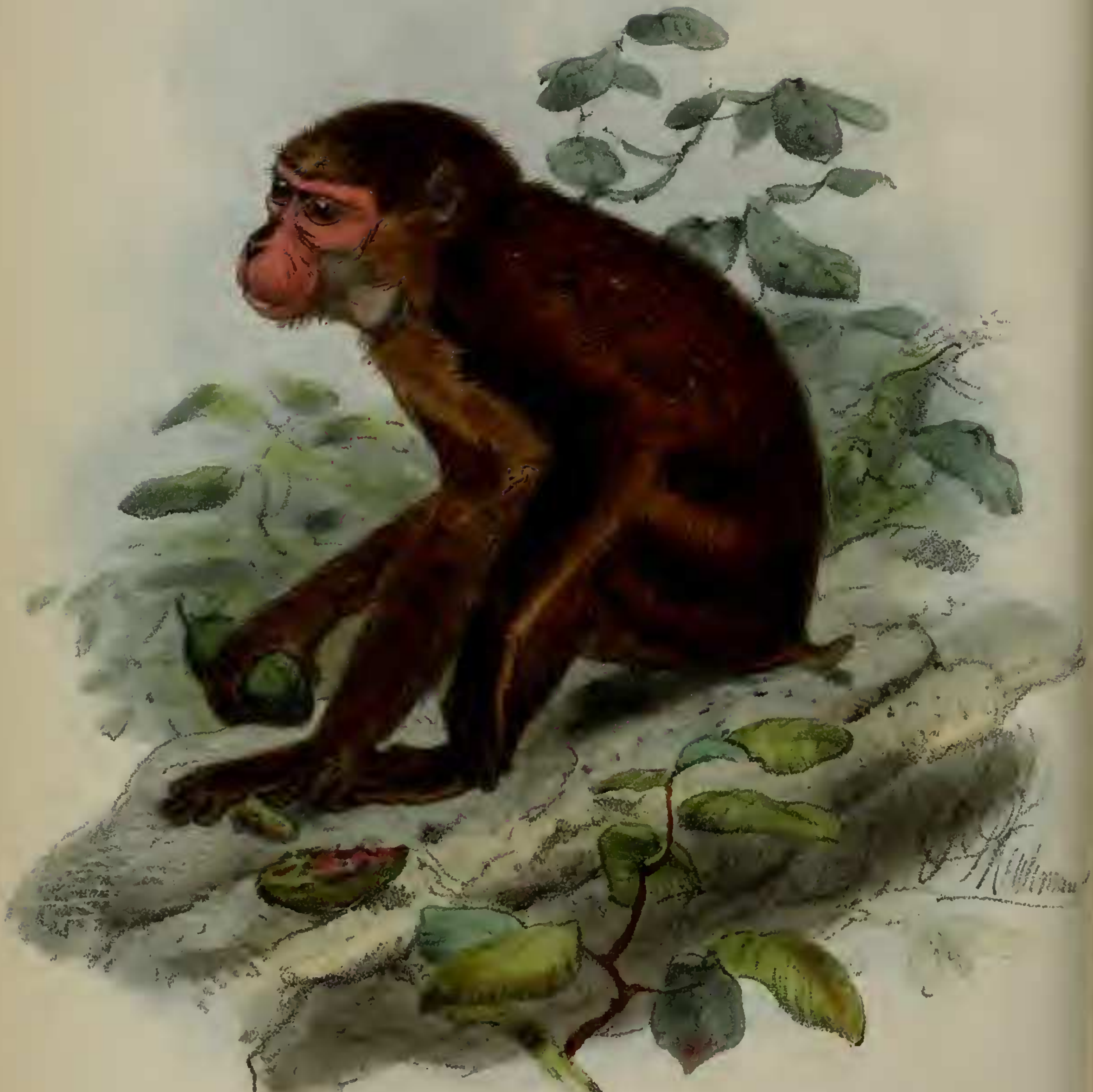
We have now, therefore, in the Gardens three specimens of this Burmese Monkey, which is a species of great interest, and quite new to us. But, as I have already stated (*anteà*, p. 203), it seems to be the same species as that originally discovered by Diard in



J. G. Keuleman lith.

M & N Hanhart imp.

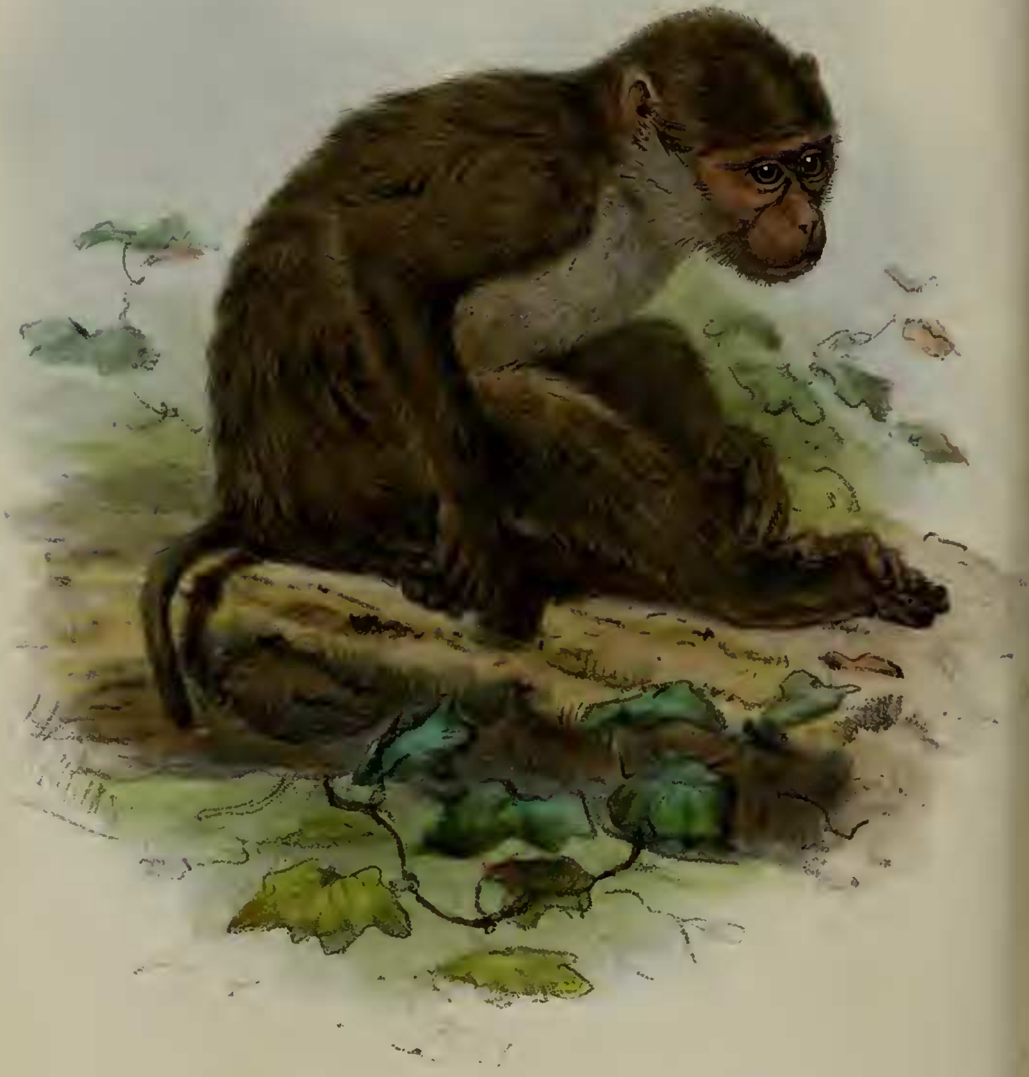
RHINOCEROS LASIOTIS. ♀



J G Keulemans

M&N Hanhart imp

MACACUS RUFESCENS.

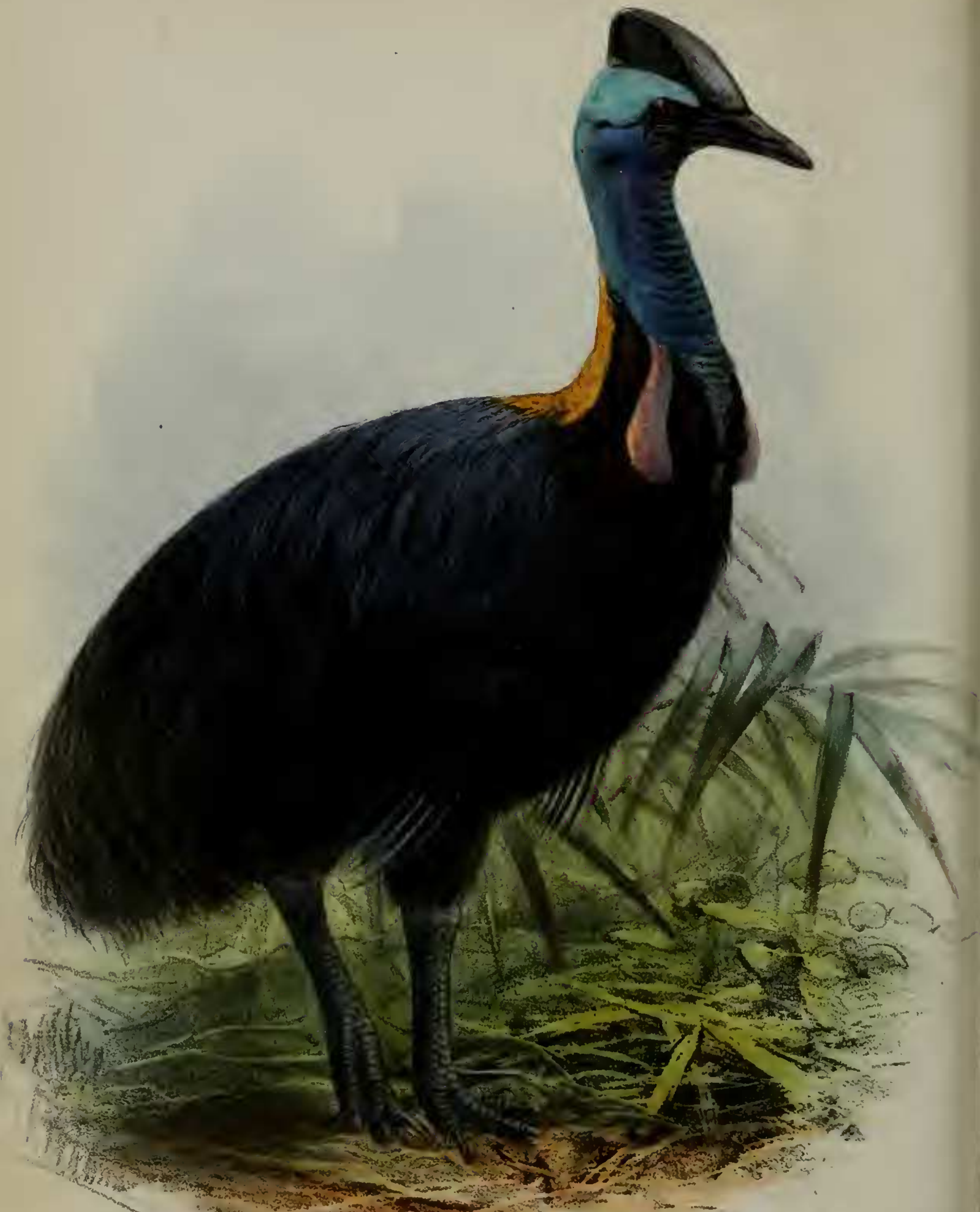


J. G. Keulemans lith.

M. & N. Hanhart imp.

MACACUS RHESO-SIMILIS

[illegible] URAL [illegible]



J. G. Keulemans lith.

M&N. Hanhart,

CASUARIUS BICARUNCULATUS.

Cochin China, and described and figured by Is. Geoffroy as *M. arctoides*.

2. Along with the examples of *Macacus arctoides* Mr. Jamrach brought a single male specimen of another closely allied, but apparently distinct, species of Macaque, which he obtained in the Calcutta market. Having the same general structure and short tail as *M. brunneus*, it differs in the general reddish colour of its fur. For this animal I adopt the temporary name (*Macacus rufescens*) suggested by Dr. Anderson (*anteà*, p. 204). I hope hereafter to be able to give a complete account of it. Meanwhile the accompanying figure (Plate XXIV.) will render it easily recognizable.

3. Mr. Jamrach also brought from Calcutta a single female specimen of a third Macaque, likewise apparently distinct from any other known species. On this species (Plate XXV.) I have conferred the the temporary designation *Macacus rheso-similis*. It is most nearly allied to *M. rhesus* and *M. radiatus*; and Mr. Blyth has suggested to me that it may even be a hybrid between those species.

4. Another prize secured by Mr. Jamrach in Calcutta, and obtained from him on the same date, is a fine adult specimen of the Double-wattled Cassowary (*Casuarius bicarunculatus*).

I first established this species in 1860, on an immature specimen living in the Society's Gardens *. A second, likewise immature example was obtained in 1869 †, but, like the former, unfortunately died before attaining the adult stage.

The specimen now obtained is of the highest interest, as showing how very distinct this Cassowary is from all its congeners. Referring to the arrangement of the genus which I gave in my last notice on this subject (see P. Z. S. 1872, p. 150) *Casuarius bicarunculatus* belongs to the group with the compressed casque, containing *C. galeatus* and its allies, and is more nearly allied perhaps to *C. galeatus* than to any other known species, but, putting aside the obvious distinction of the two lateral widely separated neck-wattles, may be at once distinguished, as will be seen by the accompanying figure (Plate XXVI.), by the smaller casque which rises from a much smaller basis on the vertex, and by the very different colouring of the head and neck.

5. A female Prongbuck (*Antilocapra americana*) purchased from a dealer in Liverpool on the 21st of February.

The only individual of this species hitherto ever possessed by the Society is the male received in 1865 ‡, upon which Mr. Bartlett's observations upon the shedding of its horns and Dr. Murie's notes upon the anatomy of this animal were based §. A male example of this animal was subsequently received by the Zoological Gardens of Antwerp, but has since died. So far as I know, our present specimen is the third which has reached Europe alive. The only appearance of horns that our animal possesses consists of two small protuberances just elevated above the skin. Except in the absence of these appendages, it exactly resembles the male of the species.

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* See P. Z. S. 1860, pp. 211, 248; and Trans. Zool. Soc. vol. iv. p. 358, pl. lxxiii.

† See P. Z. S. 1869, p. 149.

‡ See P. Z. S. 1865, p. 60, pl. iii.

§ See Bartlett, P. Z. S. 1865, p. 718, and Murie, P. Z. S. 1870, p. 334.

Mr. R. B. Sharpe, F.Z.S., exhibited some specimens of Blue Rock-Thrushes (*Petrocossyphus*). Referring to an article in the tenth part of the 'Birds of Europe' for full details and proofs of the conclusions at which he had arrived, Mr. Sharpe pointed out that the female of the Blue Rock-Thrush of Europe did not always remain in a spotted plumage, as was stated by authors, but ultimately got blue like the male, though she took a much longer time than the latter in assuming the mature livery. In the same way, *P. solitarius* of China ultimately passed from the blue-and-red stage (*P. manilla* of authors) into a fully blue plumage, in which state it was only distinguishable from *P. cyanus* of Europe by its smaller size. It was shown that the change from a spotted plumage to the blue-and-red dress was very gradual, as was also the gradation from the blue-and-red plumage to the full blue garb of the adult. *P. affinis* of Blyth was stated to be nothing but the intermediate stage of the last gradation, and that the variation in this supposed species was caused by the more or less advanced character of the plumage. Mr. Sharpe exhibited specimens (chiefly from the collection of Mr. Swinhoe), tracing all the stages through which the species passes, from the spotted nestling to the fully mature blue bird.

Mr. Sclater exhibited a skin of the Yellow-billed Cuckoo of the U. S. of America (*Coccyzus americanus*), which had been shot by Mr. W. H. Hudson, C.M.Z.S., at Quilines, Buenos Ayres, April 21, 1870, and was stated by that gentleman to be the only specimen of this species he had ever obtained. Except in its slightly larger dimensions, Mr. Hudson's bird did not differ from other examples of this widely wandering species, of which Mr. Sclater exhibited specimens from Jamaica, Mexico, and the U. S. of Columbia. Mr. Sclater remarked that there could be little doubt that the bird obtained by Natterer in S. Paulo, Brazil, and referred by v. Pelzeln to *Coccyzus bairdi**, was also an accidental visitor of this species, which had so often strayed even into Europe.

Major Godwin-Austen, F.Z.S., exhibited a skin of *Ceriornis blythii*, and called attention to the differences between this species and *C. satyra*, *C. melanocephalus*, and *C. caboti*. *Ceriornis blythii* had been first obtained in Upper Assam by Dr. Jerdon, having been brought from the neighbouring hills. Its exact locality and range to the west, however, were doubtful. The specimen exhibited had been shot by Mr. Roberts, of the Topographical Survey, in the Naga Hills, near Sima-Gooding, at about 7000 feet alt., and was of great interest as settling the question of its exact habitat.

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* Orn. Brasil. p. 274.

The following papers were read:—

1. Notes on a Specimen of the Broad-headed Wombat (*Phascolomys latifrons*). By Alex. Macalister, M.B. (T.C.D.), Professor of Zoology in the University of Dublin, President of the Royal Geological Society of Ireland.

[Received February 23, 1872.]

Some time ago I obtained from Mr. Gerrard, for the Dublin University Museum, a skin of this rare Wombat; and as there was a skull attached to it I caused it to be removed, and have made on the specimen the following notes. It was a young male; and its measurements, as compared with the two other recorded examples of the species, are as follows:—

	T. C. D.		Dr. Murie's.		Mr. Angas's.	
	in.	lin.	in.	lin.	in.	lin.
Length from tip of nose to root of tail	33	6	37	0	37	0
Length of tail	1	0	1	0	1	0
Height at shoulder	11	0	13	6	12	0
Height at loins	11	0	13	0	14	0

The name *P. latifrons* was based by Professor Owen in 1845 on a skull of a Wombat which he described (P. Z. S. 1845, p. 82). Another individual was afterwards described by Mr. Angas in 1861. The exact identity of the species, however, has been a matter of difference of opinion, Mr. Gould, Dr. Gray, and Dr. Murie having expressed varying views on the subject. As Dr. Murie says concerning this species (P. Z. S. 1865, p. 839) that "it at present remains uncertain whether the *P. latifrons* of Owen is yet determined—that is, as regards the identification of the skin or living animal with the skull first described and demonstrated by him to belong to a distinct species," I have therefore thought that the facts derived from my specimen might be interesting as a contribution towards the final settlement of the question of specific identity.

Dr. Murie (*loc. cit.*) describes the typical *P. latifrons* (Gould's *P. lasiorhinus*) as being of a lightish grey tinged with brown. My specimen is of a rather dark mottled grey; not like the light sandy buff of Mr. Gould's *P. lasiorhinus*, or the nearly uniform blackish brown of Dr. Gray's *P. angasii*. In my individual the roots of most of the hairs are of a dark brown, the extremities whiter or grey, the anterior two thirds are much darker than the posterior third, and the hairs in the latter area have not the dark roots that those in front exhibit. The tips of the hairs on the sides are much lighter than on the back, and the roots of the lateral hairs are darker than the median. Dr. Murie's description of the wavy lines seen here and there, where a preponderance of the dark or light tints run side by side, is perfectly applicable to my specimen. The rufous tints noticed by him in the hairs of the rather truncated posterior extremity of the body, as well as the description of the hairs in this region, are also true of the individual under notice.

The hairs of the underside of the neck are white and silvery, diverging from the rather darker median line; and there are one or two blackish spots on the side of the abdomen. The facial surface agrees with Dr. Murie's specimen in having the dark spots at the inner and outer canthi, the former being much the larger; there are also the whitish-grey spots above and below the eye, the lower being of the two the better defined. There is, however, no blackish or dark spot in the centre of the forehead and between the eyes, as Murie found in his specimen. All the strong hairs of the eyebrow, eyelash, and whiskers are black; there are no whitish ones intermingled. The tip of the nose is covered with silvery-white adpressed hairs; the left nostril is margined on its inner side by a large spot of brown hairs, the right is surrounded by whitish hairs. The dark spot under the chin noticed by Murie is well marked; and the ears have also the white tufts on their outer sides. The head-measurements also correspond, as follows:—

	T. C. D.		Dr. Murie's.		Mr. Angas's.	
	in.	lin.	in.	lin.	in.	lin.
Length from snout to occiput	8	6	9	0	10	0
Length from nose to root of ear	7	0	8	0		
Girth above eyes	15	5	18	6	18	0
Breadth between inner canthi	3	0	3	11	3	0
Breadth between outer canthi	4	6	6	0		
Breadth between roots of ears	4	6	5	0	5	0
Breadth of ears	1	8	2	0		
Breadth of muzzle	2	0	2	6		
Length of ears	3	2	3	0	3	8

From these considerations it will be seen that my specimen is in the main identical with Dr. Murie's Wombat, and that slight variations in colour are not of great importance in this species.

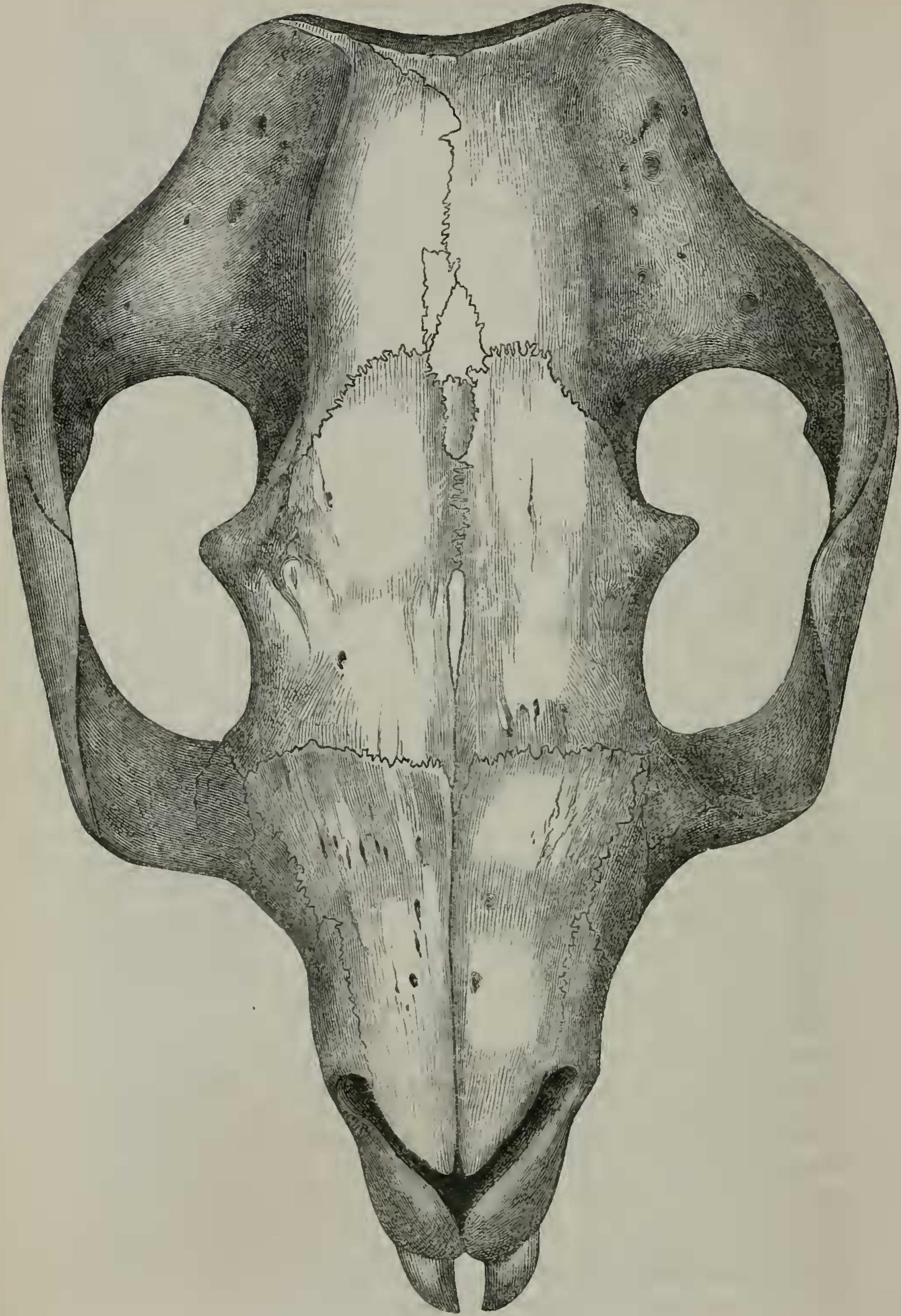
The skull varies in some particulars from the descriptions given either by Professor Owen (T. Z. S. vol. iii. p. 303) or by Dr. Murie (*loc. cit.* p. 842)—which is interesting, as these two hitherto described skulls do not precisely agree with each other in all particulars. I have therefore given an account of the divergences. Like Dr. Murie's, my specimen was young—apparently still younger than his; and all the sutures are particularly distinct, not obliterated as in Professor Owen's. The following are the measurements of the skull contrasted with those of Dr. Murie and Professor Owen:—

	T. C. D.		Dr. Murie's.		Prof. Owen's.	
	in.	lin.	in.	lin.	in.	lin.
Total length of cranium	6	2	6	5	6	3
Greatest width at the posterior part of the zygomatic arch	4	3	4	9	5	0
Width behind orbits when contracted by temporal fossæ	1	4	1	5½	1	3
Width at anterior part of zygomatic arch	3	10	4	0		
Length from occipital crest to temporal fossa	2	0	2	1½		
Length of nasal bones	2	0	2	2	2	0
Width of same behind (both together)	2	0	2	4	2	5
Width of same anteriorly	0	11	1	2	1	2
Length of frontal bones	2	2	2	4½	2	5
Width of same between orbits	2	5	2	7½	2	9
Width of intermaxillary	0	5	0	3		
Length of palate	3	6	3	8	3	7
Width between anterior molars	0	5	0	3½	0	5½
Width between posterior molars	0	9	0	9	0	10½
Width of both upper incisors	0	8	……		0	9
Depth of same singly	0	3½	……		0	3
Distance from upper incisors to molars	1	6	1	8	1	6½
Total extent of row of molars	1	9	1	10½	1	9
Length of lower jaw	4	6	……		4	4
Greatest breadth of same	4	2				
Height in vertical line from the coronoid process	2	7	……		2	9
Width of lower incisors	0	6	……		0	6
Depth of the same	0	2½	……		0	3

My specimen exhibits the characteristic features pointed out by Professor Owen (Catalogue of Osteological Specimens, vol. i. p. 334, no. 1843), namely:—"Great development of the postorbital angles; great and sudden expansion of the anterior half of the frontal bones; the superior breadth of the strip of the maxillary bone which ascends in front of the malar and lachrymal bones to join the nasal bones, and the enormous depth of the supratympanic fossæ."

The peculiar skull-features presented by it are the following:—The foramen magnum is notched posteriorly so as to give it somewhat of a trefoil figure, like that in *Phascolomys wombat* and *platyrhinus*; in Murie and Owen's specimens it is oval. The line of suture between the exoccipitals and the supraoccipital is still apparent, though the bones are united; and these sutures impinge on the foramen magnum at the sides of the posterior notch. A fainter trace of the suture between the basioccipital and exoccipital is still apparent crossing the anterior and inferior part of the condyle. An exceedingly minute postcondyloid foramen and a double anterior condyloid are present; and the lateral spurs of the basioccipital are rounded and prominent (see fig. 2, p. 501). Above the occipital crest there is the trace of a short, widely triangular, epactal bone in the lambdoidal suture, measuring 9 lines in length antero-posteriorly and 3 in breadth. This is consolidated to the left parietal; but its suture on the right

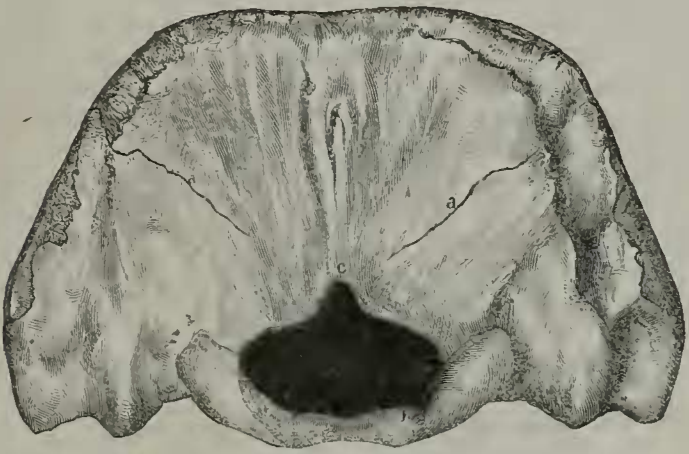
Fig. 1.



Skull of Broad-headed Wombat, upper surface.

side is very distinct. This bone is perfectly separate from the supraoccipital; but in Dr. Murie's specimen, if I may judge from the plate (*l. c.* p. 844, fig. 1), it was ossified to the occipital. The temporal crests are not so much raised posteriorly as represented in Dr. Murie's plate; and the sagittal suture is neither so deeply nor so regularly toothed. Two exceedingly curious Wormian intercalary bones occupy the anterior seven lines of the suture, the entire length of which measures 1 inch 4 lines. The large holes in the squamosal are very like those in Dr. Murie's woodcut; they are more numerous (eight) on the right side, and only six on the left. The occipital crest is more distinctly curved in my specimen than in his. The frontal bones are rounded at their coronal ends, the line of the suture being distinctly convex backwards. The anterior sagittal Wormian bone projects forwards into this suture, and articulates with another of these remarkable sutural bones, which exists in the frontal suture at its posterior border, extending for 5 lines between the frontal bones. In front of this the suture stretches for 5 lines, when it is again interrupted by another Wormian bone, a long thin slip, $1\frac{1}{2}$ line broad and $8\frac{1}{2}$ lines long. This bone, however, is on the surface of the suture merely, and does not penetrate into the entire depth of the interspace between the frontals; in front of it the frontal suture extends for 7 lines. The supraorbital portions of the frontal bones are very much raised and rough; and the alisphenofrontal suture extends to the postorbital process on the left side, but is nearly obliterated on the right. A spur of the frontals is continued forwards in the middle line between the nasals: this is longer (4 lines) and sharper on the left, smaller (2 lines) on the right. There is no appearance of this "snibb" in any of the other crania; and it is interesting to find such a process springing from two ossific

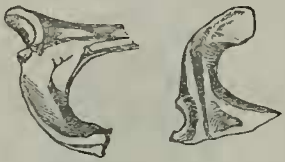
Fig. 2.



Skull of Broad-headed Wombat, back surface.

centres, as the presence of a similar beak in the parietal bones of scaphocephalic human crania has been used as an argument in favour of Minchin and Von Bär's theory of a single biparietal ossific centre in such cases. The nasals are flat, and project rather further in front of the intermaxillaries than in Dr. Murie's specimen. A thin nasal lamella of the maxillary bone ascends between the nasals and the lachrymal to the anteorbital process of the frontal. The pterygoid bones are separate on each side; and the ossified ligamentum pterygo-spinosum of Civinini is strong and sharp. The sutures between the basioccipital and the basisphenoid, as well as that between the latter and the presphenoid, are widely open. The large rough tubular tympanic is quite loose, and the deep supratympanic fossæ are very large. On one side the malleo-incudal bone remained; and I have made of it the appended sketch (fig. 3).

Fig. 3.



Malleo-incudal bone, front and back surfaces.

The drawings (figs. 1 & 2) accompanying show the principal points of interest herein noted.

2. On the Imperial Eagles of India. By W. E. Brooks, C.E., Etawah. (Communicated by the Secretary.)

[Received March 4, 1872.]

It has been supposed by many that the Indian Imperial Eagles were all referable to one species, which, again, was identical with the European bird.

The European species, however, the true *Aquila imperialis*, Bechst., is quite distinct from our Indian birds, as Mr. Howard Saunders has recently shown in the Society's 'Proceedings' (P. Z. S. 1871, p. 37).

The young of the European bird is of a plain tawny brown, and is never lineated. The old bird differs from our Indian species in having white *on the ridge of the wing*, as well as white scapular feathers. Neither of our Indian birds can, therefore, any longer retain the name of *imperialis*.

There are four stages of Imperial Eagle found in India and the East generally. These have been referred to one species by Dr. Jerdon and others, but were kept separate by Mr. Hodgson.

They belong to two distinct species, *Aquila crassipes*, Hodgson, and *Aquila bifasciata*, Gray and Hardwicke.

The former (*A. crassipes*) has three well-marked stages:—

1st. Light brown plumage, lineated both above and below. Each feather possesses a light fulvous central stripe. The tail is, as a rule, plain dark brown with a light tip; and it is not barred.

2nd. A very dark, black-brown plumage, both above and below, save the upper part of the head and nape, which are buff or fulvous. The tail changes to blackish brown, or nearly black, the upper part being barred with grey, *and the end having a broad 4-inch band of black.* The top of the head has also generally a patch of brown.

3rd. The same as the second stage, with the addition of snow-white scapulars, to a greater or lesser extent.

I am correct in stating that the striped bird passes directly to the old black-brown bird with light head, and am not advancing a theory of my own; for Mr. Anderson, of Futtehgurh, has shot two half-changed birds, which he has kindly lent to me. These have numbers of the lineated feathers still remaining intermixed with greater numbers which are black-brown. I believe a change of colour in these feathers takes place without a moult. The tail of one bird is partly changed (by a moult) to the adult tail with grey bars and dark terminal band.

Our second species (*A. bifasciata*) appears only to have *two* well-marked stages.

1st. The whole bird is a very pale dull grey-brown, sometimes speckled slightly with fulvous on the abdomen. There are two broad fulvous wing-bars, formed by the broad light tips of the greater coverts and those of the secondary quills. The tail has also a light tip, and is generally slightly barred with hoary grey.

2nd. The very pale brown changes to a rather darker brown (which is still but a dull light-toned brown compared with that of mature *A. crassipes*); the wing-bars disappear, and the tail is *strongly* marked with wavy grey bars on a dark brown or black ground. There is no dark terminal band, *but the barring is continued to the end of the tail.*

The only further change towards maturity in this Eagle which I have seen, is, that the back of the head and nape of the neck become buff-coloured or fulvous. The head then resembles that of the mature *A. crassipes*; but the brown of the body is not half so dark, being a sort of earthy brown, "soil-brown," as Mr. Hodgson expresses it.

Mr. Hodgson has two drawings of this Eagle—one in the first stage (typical *A. bifasciata*), and the other in what I take to be the mature bird with buff nape. He has another drawing, termed "*A. nipalensis*," which is clearly intended to represent a very pale example of *A. bifasciata* in its first stage. I possess a bird almost as pale.

He has two drawings of the striped bird which he terms "*Aquila crassipes*;" and I know of no other name which this Eagle bears. The drawings are remarkably accurate.

In coming to the conclusion that we had two Indian Imperial

Eagles, I had the use of a very fine series, formed of Mr. Anderson's birds as well as my own. This collection, numbering between 30 and 40 birds, is, I believe, the finest there is; for I have not heard of even Mr. Hume possessing the half-changed striped birds. It was very pretty to see how this striped bird changed gradually into the old black one, and to see, on the other hand, how remarkably distinct *A. bifasciata* was from *A. crassipes* in every stage. Beyond the fulvous on the back of the head the two birds have nothing in common, except that they are of very similar size.

3. On the Genus *Chelymys* and its Allies from Australia.

By Dr. J. E. Gray, F.R.S. &c.

[Received February 28, 1872.]

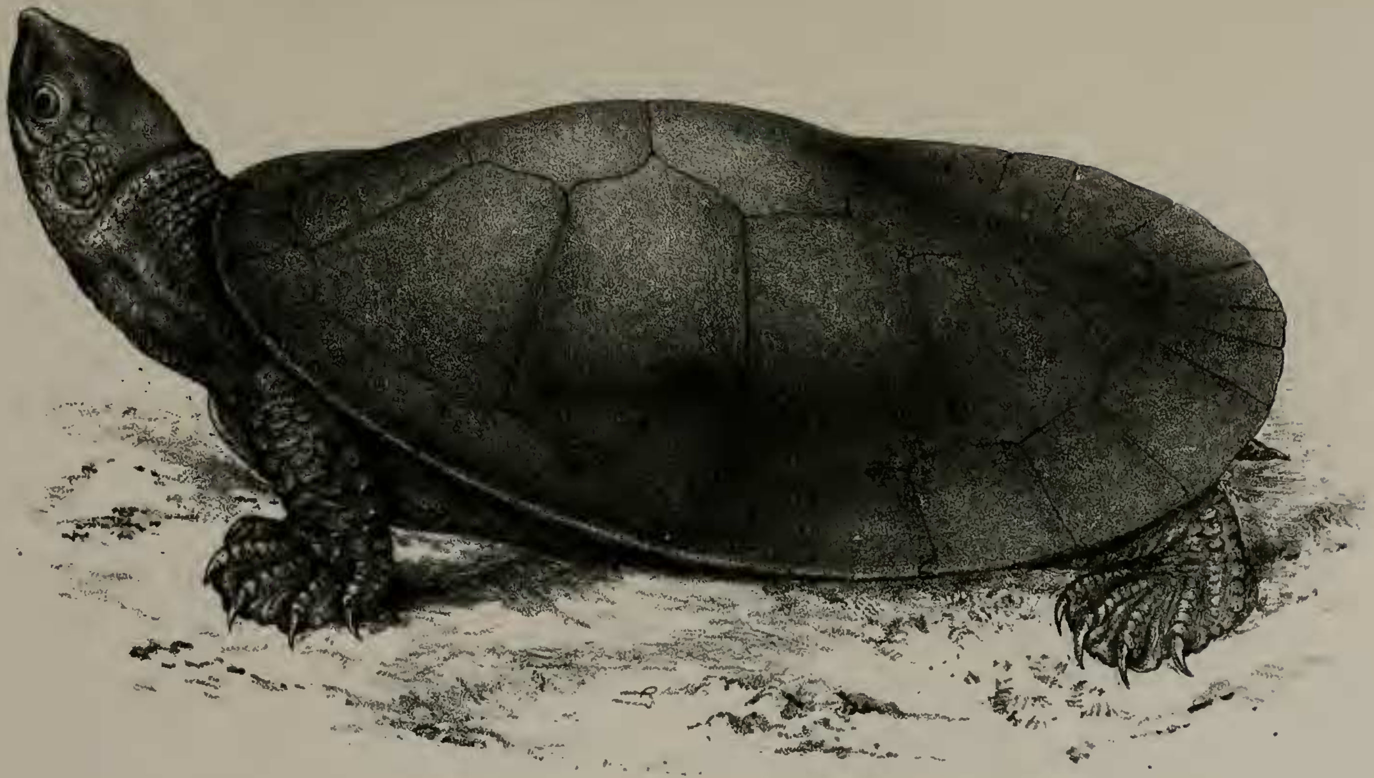
(Plates XXVII.–XXIX.)

Chelymys of Australia, in its more extended sense, forms with *Platemys* from Tropical America a group differing from all the other *Hydraspidæ* in having a solid skull with a broad square face and crown, with the temporal muscles on the side, and a broad auri-occipital arch. The American genus *Platemys* is somewhat like the Australian genus *Elseya*, but differs from it in many particulars sufficiently to shew that it is a distinct genus.

For many years only a single species, called *Emys macquaria* by Cuvier, was known; but as the country has been more searched we have gradually become acquainted with several very distinct species, which in the 'Annals and Magazine of Natural History' for 1867 (vol. xx. p. 44) I separated into two genera, *Chelymys* and *Elseya*, the former having no beard on the chin, whilst the latter has two distinct beards, but no nuchal shield.

In the 'Annals and Magazine of Natural History' for 1871 (viii. p. 117) I separated the genus *Euchelymys* from the latter because it had a narrow nuchal shield as well as two beards. We have since received from Mr. Krefft several more specimens of these animals—which has induced me to revise the characters of these genera, and also to examine and figure the skulls of two of them, as well as the other parts of the skeleton. I am now in doubt whether the existence of a narrow nuchal plate is a sufficient character for the establishing of a genus or species; but I must leave this question to be solved by the discovery and examination of more specimens. As yet we have only a single specimen with a nuchal plate; and, as far as I have had an opportunity of judging, I think it may probably be an accidental malformation of a comparatively common species without a nuchal plate, of which there are several specimens in the Museum collection.

The Australian genera have solid, rather thick, skulls, unlike the



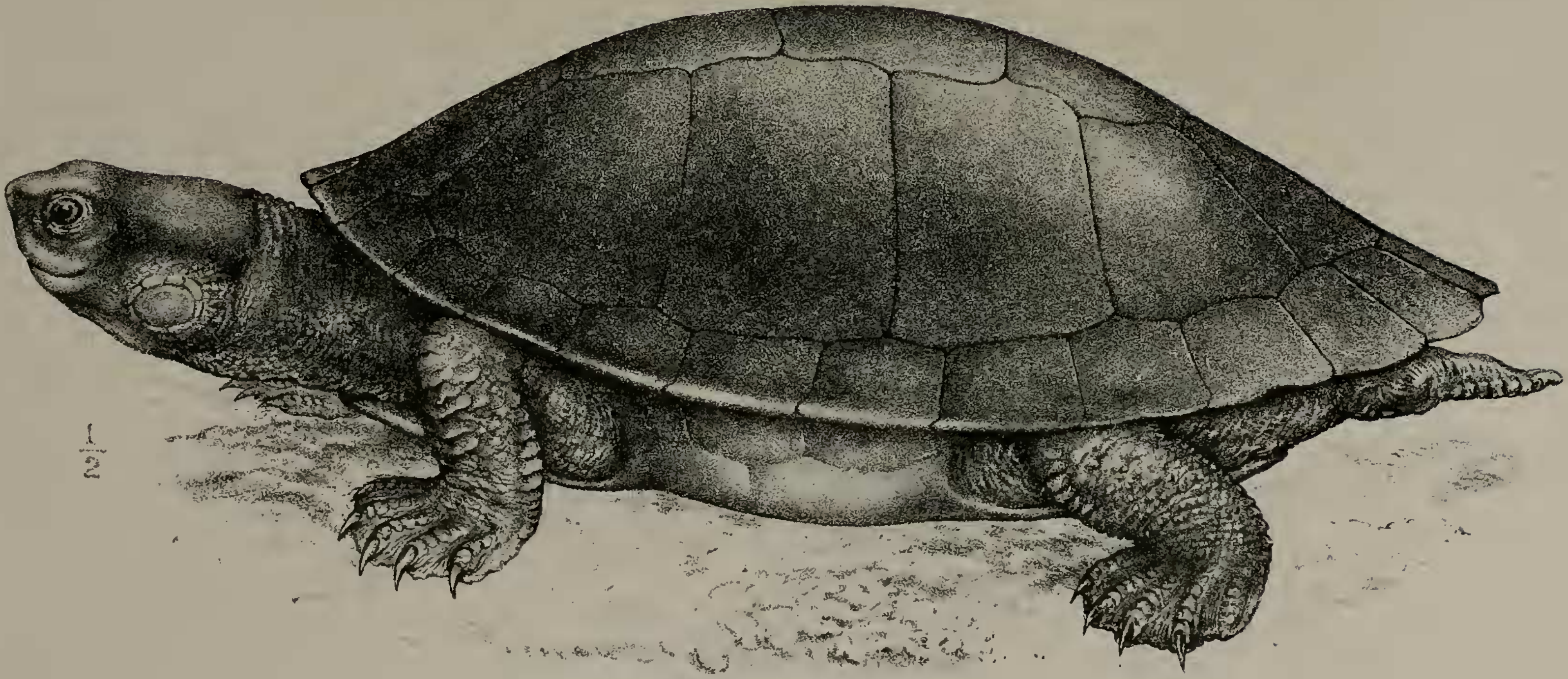
C. Berjeau. del et lith.

Mintern Bros. imp.

CHELYMYS VICTORIÆ

BRITISH MUSEUM
NATURAL HISTORY

P. Z. S. 1872. Pl. XXVIII.



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CHELYMYS KREFFTII.

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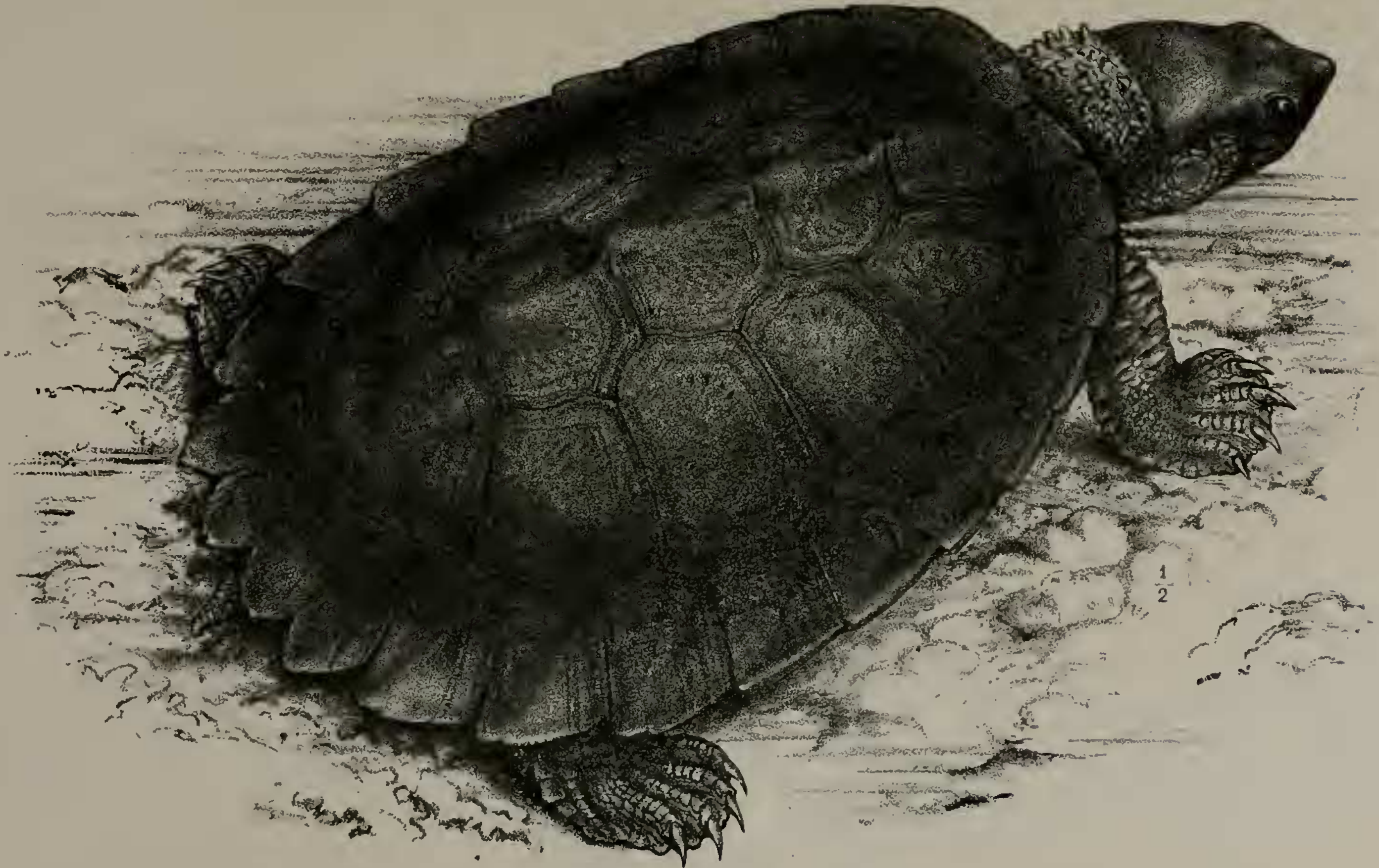


C. Berjeau del. et lith.

Mintern Bros. imp.

ELSEYA LATISTERNUM

BRITISH MUSEUM
NATURAL HISTORY

thinner skulls of the American genus *Platemys*. They may be divided thus:—

I. *Head covered with a skin, which is reticulated over the temples; nuchal plate distinct; neck smooth, reticulated.*

1. Chelymys. Chin not bearded; nuchal plate generally broad; occiput like the crown. (Fig. 1, p. 505, skull.)

2. Euchelymys. Chin two-bearded; nuchal plate narrower; sides of occiput with two oblong, subtriangular, diverging, hard plates.

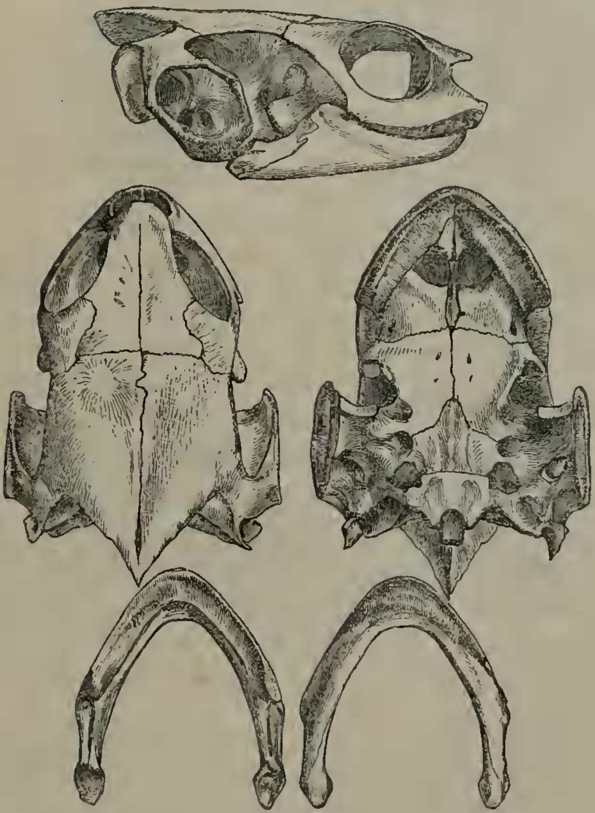
II. *Head and temporal muscles covered with a hard bony sheath; nape spinose; chin two-bearded; nuchal plate none (or, rarely, very small and narrow).*

3. Elseya. (Fig. 3, p. 507, skull).

1. Chelymys.

Head covered with a smooth skin, reticulated and divided into

Fig. 1.



Skull of *Chelymys victoriæ*.

small plates over the temples. Chin without any beard; nape smooth, reticulated; legs with small scales. Nuchal shield broad and well developed. Crown and occiput nearly square, scarcely dilated behind; hinder edge produced in the middle. Vertebral shields of the adult quite as long as broad.

Skull depressed, without any zygomatic arch, and with a large tympanic opening; forehead and crown broad, flat, produced behind in the middle of the occiput. Basisphenoid transverse, shorter and broad, with a triangular projection on the front edge, produced behind the hinder part of the palatine bones. The basioccipital oblong, transverse, as broad as the sphenoid.

I am inclined to think that more than one species were included under the name of *Chelymys macquaria* in the Catalogue and Supplement, some even belonging to what is now regarded as another genus, as they have two beards, which were overlooked in the stuffed specimens.

* *Thorax ovate, more or less depressed, with the hinder margin expanded. Head of moderate size.*

1. CHELYMYS MACQUARIA. B.M.

Emys macquaria, Cuvier, R. A. vol. ii. p. 11.

Hydraspis macquaria, Gray, Synopsis Rept. p. 40.

Emydura macquaria, Bonaparte, Tab. Analyt. p. 8.

Platemys macquaria, Duméril and Bibron, Erpétol. Générale, & Cat. Méth. p. 21.

Chelymys macquaria, var. 1, Gray, Cat. Shield Rept. p. 57.

Hydraspis australis, Gray, in Gray's Travels in Western Australia, vol. ii. p. 445, tab. vi.

Hab. Australia, Macquarie River (*Gould*, 1840).

The species was originally named by Cuvier from a specimen in the Paris Museum said to have been brought from the Macquarie River by MM. Lesson and Garnot; and the first four names quoted are derived from this specimen. I am inclined to suppose that Mr. Gould's specimen, which I described in Capt. Gray's narrative, may be the same species, as it is from the same river.

2. CHELYMYS VICTORIÆ. (Plate XXVII.) B.M.

Hydraspis victoriæ, Gray, Zool. Misc. p. 55.

Chelymys macquaria & var., Gray, Cat. Shield Rept. p. 57; Suppl. Cat. Shield Rept. p. 76, fig. 25 (head); P. Z. S. 1856, p. 31.

Var. 1. Shell depressed, expanded.

Var. 2. *marmorata*. Back more solid and convex, marbled.

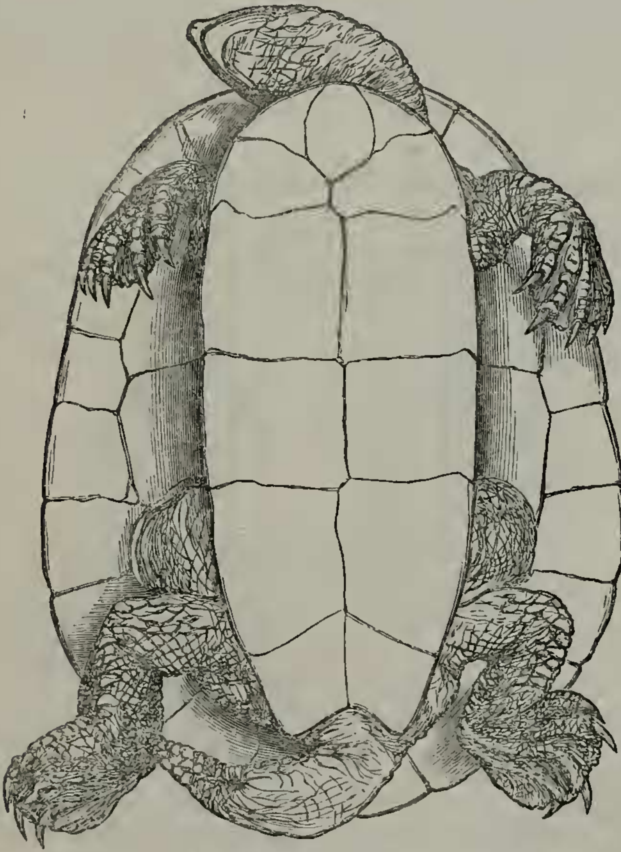
Var. 3. *sulcata*. Back with a central groove, shields obscurely longitudinally grooved.

Hab. N.W. coast of Australia, Victoria River (*Capt. W. Chambers, Mr. Gould*); east coast of Queensland, Burnett River (*Mr. Krefft*).

This species appears to have a very extensive geographical distribution. There are several specimens in the British Museum brought from the Victoria River by Capt. William Chambers and Mr. Gould, and more lately several specimens in spirit from Burnett River on the east coast of Queensland. It is remarkable that the specimens received at the same time from the Victoria and Burnett rivers present such variarion in form that one is induced to believe that they are referable to two species. Having only one or two specimens of the one from the Macquarie River, we have not the means of deciding whether the same variations occur in that river.

The specimens agree in having a lead-coloured head, with a broad streak from the middle of the hinder part of the orbit to the upper front margin of the tympanum, and a similar, rather broad, streak from the angle of the mouth to the underside of the tympanum.

Fig. 2.



Chelymys victoriæ, from Krefft's photograph.

In general the gullet and throat below this line are white; but in some they are more or less varied with lead-colour. The thorax in all the specimens is much more oblong and convex than in the specimens received from Segou, on the Macquarie River; but they vary both in the outline of the thorax and in the convexity of the back very considerably. The smallest is the broadest, with the back of the shell much elevated in the centre. Indeed no two of the specimens are alike in form and convexity, which induces me to believe that they all belong to one variable species.

** *Thorax oblong, convex, high. Head large.*

3. Chelymys krefftii. (Plate XXVIII.) B.M.

Thorax oblong, scarcely broader behind, very convex. The second, third, and fourth vertebral shields as long as or rather longer than broad; the second and third nearly square, with only a slight angle near the middle of each side; the fourth contracted behind; the first nearly square, rather broader than long, and rather broader in front. Thorax convex, elevated from the margin, the lateral processes convex. Head large, above olive, with a broad white streak from the back of the orbit to the upper front margin of the tympanum; a broad white streak from the angle of the mouth to the lower part of the tympanum. Beaks very strong and convex. Upper part of neck slightly granular.

Chelymys krefftii, Gray, Ann. & Mag. Nat. Hist. 1871, viii. p. 336.

Hab. Burnett River.

One specimen (Krefft's MS. no. 9) is coloured very much like the others received from Mr. Krefft, but differs in being oblong and very convex, instead of being broadly ovate and much more depressed, and in the form of the vertebral plates. It also differs in having a much larger head compared with the size of the body.

It has been suggested that this may only be a difference of sex; but it is very curious that, out of a large series, it should be the only one of the sex that has come to us.

2. Euchelymys.

Head covered with a continuous soft skin, which is reticulated over the temporal muscles, with an oblong, triangular, diverging hard plate on each side of the occiput. Chin with two beards. Back of the neck netted, slightly tuberculated or convex. Forehead and crown nearly square, scarcely dilated behind; hinder edge of occiput scarcely sinuated. Thorax convex, solid; cavity contracted in front; nuchal shields narrow, well developed; vertebral shields broad, the fifth as broad as or broader than the others. Fore legs with large transverse scales in front and with keeled scales on the outer margin.

Euchelymys (part.), Gray, Ann. & Mag. Nat. Hist. 1871, viii. p. 118.

I first established this genus in the 'Annals and Magazine of Natural History' for August 1871, placing the two species together, because they both had nuchal plates; but I believe now that the second species was founded on an abnormal specimen of *Elseya*.

EUCHELYMYS SULCIFERA. B.M.

Thorax dark olive-brown, marbled with white below; vertebral shields irregularly longitudinally sulcated, with a central continued longitudinal groove; neck slightly warty above, dark olive, with a white streak from the angle of the mouth under the ear on each side.

Chelymys macquaria, var., Gray, P. Z. S. 1856, p. 371; Ann. & Mag. Nat. Hist. 1863, xii. p. 98; Suppl. Cat. Shield Rept. p. 75.

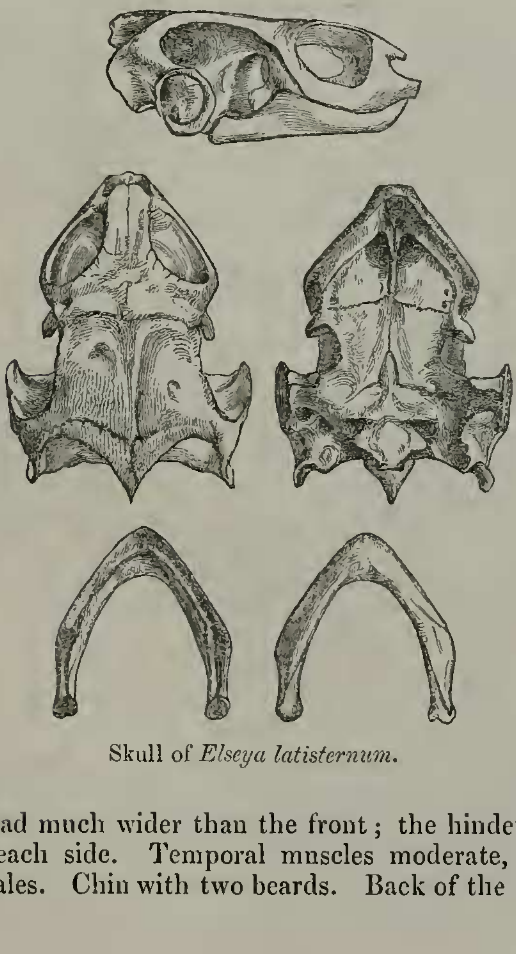
Euchelymys sulcifera, Gray, Ann. & Mag. Nat. Hist. 1871, viii. p. 118.

Hab. North Australia (*Stutchbury*, 1856).

3. ELSEYA.

Head covered with hard shields, which are incompletely divided into five large frontal and temporal plates; the nasal and frontal united, and with a small triangular central plate. The hinder part of the top of the head much wider than the front; the hinder edge rather sinuated on each side. Temporal muscles moderate, covered with reticulated scales. Chin with two beards. Back of the neck covered

Fig. 3.



Skull of *Elseya latisternum*.

with a few tubercles. Thorax depressed, dilated and reflexed on the side. Nuchal shield none (or abnormally very small and narrow). Fore legs with a few transverse scales.

The skull of *E. latisternum* depressed, broader behind; forehead and crown flat to the occiput, broad, becoming wider behind; the tympanic cavity rather produced, of moderate size; basisphenoid short, broad, transverse, with a small tapering central lobe in front, produced between the hinder part of the palatine bones. The basioccipital about as broad as long, rather lozenge-shaped, the front edge being rather arched, not so broad as the basisphenoid.

a. Front lobe of the sternum broad, with a subcircular outline, as broad as, or broader than, the hinder lobe.

1. ELSEYA LATISTERNUM. (Plate XXIX.) B.M.

Front of the sternum broad, much broader on the hinder part, with a rounded outline; nuchal plate none; intermediate plate moderate.

Elseya latisternum, Gray, Ann. & Mag. Nat. Hist. 1871, viii. p. 292.

Var. 1. Underside of the shell pale yellow, rather darker on the margin of the shields. There are two specimens of this variety in the British Museum, from Cape York, North Australia, which were described in the 'Ann. & Mag. Nat. Hist.' for July 1867.

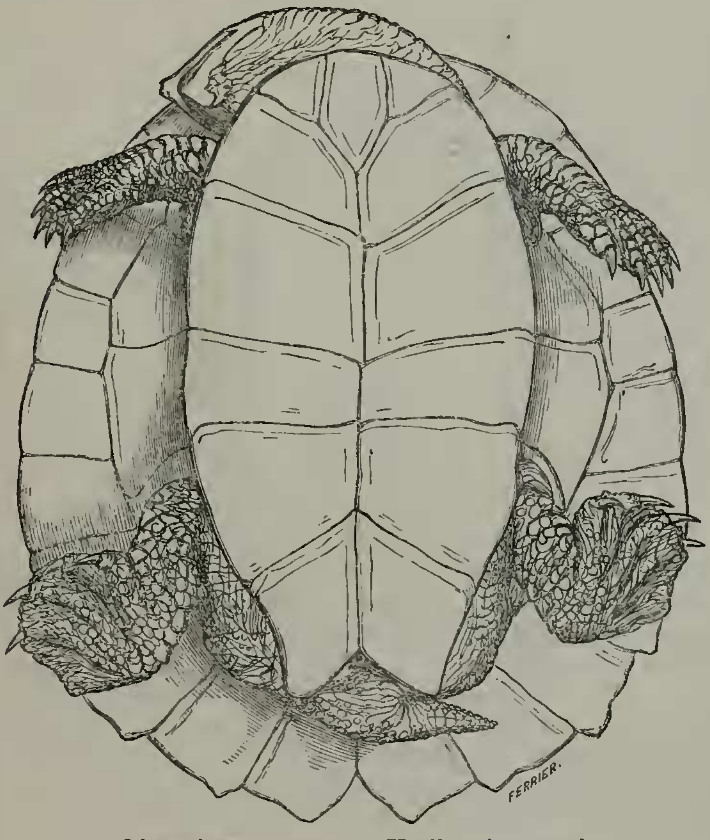
One of these specimens is peculiar for having a small linear extra shield on each side, on the outer part of the abdominal shield, which is unusually short in this specimen. To judge by the thickness and size of the tail, the two specimens appear to belong to two different species.

Var. 2. This differs in the sternum being pale greyish white, more or less marbled with dark brown. Two specimens of this variety were received from Mr. Krefft, who obtained them in the Burnett River, Queensland. They are exceedingly like the single specimen of *Euchelymys spinosa* in the British Museum; but they both have no indication of the narrow nuchal shield observed in that specimen. These are the specimens described in the 'Ann. & Mag. Nat. Hist.' 1871, vol. viii. p. 292.

Var. 3. The underside dark, blackish; the lower margin reddish, with black edges to the shields. There are two specimens of this variety received from Mr. Krefft. One is the largest example of the species that I have seen. The dorsal shields are rather rugose, with regular linear pits and more elongated grooves. The dorsal line is sunken. The head is covered with a uniform hard shield, which is slightly sinuate on each side of the hinder margin. With this specimen was received another, about two-thirds the size (indeed rather more convex than the other species of the genus in the Museum), which is peculiar for having thirteen marginal shields on each side, six forming part of the margin of the last vertebral plate (see Plate XXIX., animal); there is no doubt that this arises from the division into halves of the usual caudal shield; but they are remarkably regular, and, curiously enough, each of these shields is bidentate at the apex. The last vertebral shield is much larger and wider; but they all vary a little in the size of the shield, which is comparatively smallest in the largest specimens.

A young specimen from Cape York, North Australia, has the vertebral shields short and much broader than long; the upper part of the thorax is dark olive, the underside white, varied with more or less broad brown lines on the sutures of the marginal and sternal shields; the head olive, with a paler streak from the nostrils over the eyes to the side of the occiput; beneath, the throat and sides of the neck white, including the lower half of the tympanum; a blackish margin to the lower edge of the lower beak, becoming broader behind and extending along the sides of the neck; the beards white.

Fig. 4.



Elseya latisternum, from Krefft's photograph.

There is a very young specimen in the British Museum which probably belongs to this species; it has *four* beards—that is, the front pair in the usual place and the hinder rather behind it, both pairs being placed along the concavity of the lower jaw on the line of insertion of the skin. I do not know if this is to be regarded as a monstrosity